

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: SM Energy Company
Well Name/Number: Marlin 14-8H
Location: SE SW Section 8 T23N R57E
County: Richland, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 30-40 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig, 1000 HP to drill a Bakken Formation single horizontal lateral 10,419' TVD/14,646' MD.

Possible H₂S gas production: Slight

In/near Class I air quality area: No, Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☒ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Existing pipeline for gas in the area.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to long string hole to be drilled with oil based invert drilling fluids. Horizontal lateral hole will be drilled with brine water. Surface casing hole to be drilled with freshwater and freshwater mud.

High water table: No high water table anticipated.

Surface drainage leads to live water: No, closest drainage are unnamed ephemeral tributary drainages to Lone Tree Creek and ephemeral drainage, about 1/4 of a mile to the east and northwest from this location.

Water well contamination: No, all water wells close by are shallower than 1950'. Closest well is about 3/8 of a mile to the northwest, 1/4 of a mile to the east and about 1/2 of a mile to the west southwest from this location. Depth of these water wells are 240' and less. Surface casing will be drilled with freshwater and surface casing cemented back to surface from 1950'.

Porous/permeable soils: No, silty sandy clay soils.

Class I stream drainage: No, Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: Require 1950' +/- surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and BOP equipment to mitigate any problems.

Soils/Vegetation/Land Use

(possible concerns)

Steam crossings: None anticipated.

High erosion potential: No, location has a small cut, up to 6.5' and small fill, up to 7.4', required.

Loss of soil productivity: None, location to be restored after drilling well if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large well site 420'X330'.

Damage to improvements: Slight, surface use is cultivated fields.

Conflict with existing land use/values: Slight to none

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Existing county road, #128 and existing well access road to Franz 14-8H will be utilized to reach this location. A short access road of up to about 47' of new road will be constructed from the existing well access road into this location. Oil based drilling fluids will be recycled. Completion fluids will hauled to a commercial Class II disposal. Cuttings will be buried in the lined reserve pit. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residence is 1/8 of a mile to the east, 1/2 of a mile to the west southwest and 5/8 of a mile to the north from this location .

Possibility of H2S: Slight

Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Distance sufficient to mitigate noise.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened by the USFWS are Pallid Sturgeon, Interior Lease Tern and Whooping Crane in Richland County.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: _____

Comments: Private cultivated surface lands. No concerns.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified

Mitigation

☐ avoidance (topographic tolerance, location exception)

☐ other agency review (SHPO, DSL, federal agencies)

☐ Other: _____

Comments: Private cultivated surface lands. No concerns.

Social/Economic

(possible concerns)

☐ Substantial effect on tax base

☐ Create demand for new governmental services

☐ Population increase or relocation

Comments: Existing well spacing unit. This is a development well within this established spacing unit. No concerns.

Remarks or Special Concerns for this site

Bakken Formation single horizontal lateral 10,419'TVD/14,646'MD. Second horizontal Bakken well in this spacing unit.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected, some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki

(title): Chief Field Inspector

Date: July 13, 2010

Other Persons Contacted:

Montana Bureau of Mines and Geology, Groundwater Information Center website

(Name and Agency)

Richland County water wells

(subject discussed)

July 13, 2010

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Richland County

(subject discussed)

July 13, 2010_____

(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____